

side, and shape all together, and leave them with the carver to run three flutes 5-16ths wide on each. Next proceed to get out the pedestals. These are simply a frame, with the stiles of 2 in. scantling, with 2 1/4 in. cross framing, precisely as the door, the panels being 3/4 in. thick, and beveled in 1 1/4 in. from their edges. Clean off the face of the panels, and finish off the moldings and let the polisher body them in.

In the meantime the framing can be got on with. The top and bottom rails run across, and are framed into the pilasters or angle pieces, and the stiles are checked or sunk into the pilaster 1/4 inch (see section of pedestal). The inner frame is connected with the outer frame by four short rails. Note: the end panels are framed in grooves, but the door panels are framed or fastened in with beads. Having got the panels from the polisher, frame the 1 1/4 in. framing together, and mitre the moldings in, etc., first having cleaned off the face, and got it bodied in. Now proceed to frame the pilasters to the frames, and having dovetailed the top and bottom to the ends, clean all off, and let the carver flute them, and cut the elliptic pateras in the centers.

The doors may now be got out, and, of course, letting the stiles run through.

As the molding forms the rebate for the panels, it will be seen that the panels will be narrower by 5 16ths on each edge than the pedestal panels were, in consequence of no groove being in the stiles, etc.

The frame may now be taken in hand, the drawer fronts fitted on the rake, and the drawer sides fitted and shot to the proper shape, the front dovetails being on the rake in order to take the front.

Get out four blocks the same shape as the blocks between the drawers, and glue them on the end of the frame over the pilasters, as at E. Now get out two mock drawer fronts, and fix them between them, and face the frame to represent the blades over and under the drawer. (Note that the blades have a sunk bead on the center of their faces.) The plinth rails may now be got out and fixed, as also the bases of the pilasters.

To make the bases, get out a piece of cross grain stuff, 5 1/2 in. wide by 1 in. thick, and about 2 ft. 2 in. wide, and run the molding along the edge, and then cut it in length, and fix them, leaving their sides flush with the pilasters. The trays and cellorette drawer may now be made, the frame cleaned off, and pieces fitted on the fronts, etc., and carved as drapery. The flutes on the fronts of the drawers can then be carved, and the ram's head and angle brackets, and center ornament under drawer, finished.

The door moldings may now be mitred in, and the panels beveled 3/4 from the edge. Place the frame on the bench, and put on the runners for the drawers, and afterwards place it on the pedestals and block it in its place. Now fit and hang the doors, etc., and let the carver have them to cut the circular pateras at the angles.

After this take the top, shoot the back edge, joint two pieces of stuff 3 1/2 in. long by 2 1/4 in. wide at each end, and run the moldings through. These are to finish the top off level with the plate glass back. The top and frame may now be finally screwed together, the drawers run and stopped, and their fittings put on. The carcass backs of the pedestals may be put in, leveled, and colored, and all given to the polisher.

We now proceed with the back. This is composed of three frames, the groundwork of which is 1 1/4 stuff; the two outside frames have their outside stiles faced on the outer edge by a pilaster, 2 in. square, and which projects 2 in. above the top of the frame to receive the carved urn F. The breadth of the outside frames, including the pilasters, is 1 ft. 6 in. and the extreme height is 2 ft. 2 in. exclusive of the pilaster. These two frames are faced with 3/4 in. stuff, and the beveled glass is surrounded by a molding G. The pilaster is carved and fluted, and the dentiled cornice then mitred round the top, showing a 1/2 in. break. A small console is placed at the bottom as a suitable finish.

The center frame is got out of the same stuff as the side frames, viz., 1 1/4 in., and faced with 3/4 in. stuff. In getting out this frame, the breadth must be 2 1/4 in. narrower than the finished size, in order to allow a side facing to hide the joint of the ground work and its front facing. The extreme height of this frame will be 3 ft. 9 in. and the extreme breadth 3 ft. 1 in.

Now glue two pilasters 3 ft. 7 in. long by 2 in. square on the face, keeping them flush on the top ends, also on the outside; and on the faces of the two, glue two shaped pilasters of same length, but only 2 in. by 1 1/2 in. Mitre the cornice round, and also the necking H, and leave a break of 2 in. at the center J. This tablet is to be 3 1/2 in. wide.

The edging of the facing on the center frame is a 1/2 in. hollow. Now get out the O G pediment, and fit the looping of drapery to the urn, and give all other carvings, etc., to the carver. Having got all fitted, and the back offered to the top, give all to the polisher, and when done screw the side panels to the center panel, place on its face, and block in the silvered glass; put on the blind frames, then screw the job altogether. Screw the brackets, pediment, etc., on, and see that the doors work easily, and the locks are oiled. The doors may be hung with centre hinges, or with strong brass butts, 3 in. long, letting the knuckle stand 1/2 in. past its centre of motion, and an ornamental hinged plate screwed to the stile. Note that it is always better to have the glass before finishing the sight measurements as the bevels can be matched to mitre with the moldings, and a more even margin secured.

Fig. 1 Front Elevation.

Fig. 2 Section through Left Pedestal.

Fig. 3 " " Center of Back.

The details are half real size, and can thus be easily enlarged.

MIGRATORY birds, when flying by night, are at an elevation of from one to four miles above the earth's surface.

In the United States there are 1,942 establishments for the manufacture of agricultural implements. They use \$5,761,916 worth of timber a year.

BOY INVENTORS.—Some of the most important inventions have been the work of mere boys. The invention of the valve motion to the steam-engine was made by a boy. Watt left the engine in a very incomplete condition, from the fact that he had no way to open or close the valves except by means of levers operated by the hand. He set up a large engine at one of the mines, and a boy was hired to work these valve levers. Although this was not hard work, yet it required his constant attention. As he was working these levers he saw that parts of the engine moved in the right direction, and at the exact time that he had to open or close the valves. He procured a strong cord, made one end fast to the proper part of the engine, and the other end to the valve lever, and had the satisfaction of seeing the engine move off with perfect regularity of motion. A short time after, the foreman came around and found the boy playing marbles at the door. Looking at the engine he soon saw the ingenuity of the boy, and also the advantages of so great an invention. Mr. Watt then carried out the boy's inventive genius in a practical form, and made the steam-engine a perfect automatic working machine.—*Manchester Times*.

DO THE CHINESE INVENT.—Heretofore it has been popularly supposed that the Chinese invented the printing press, gunpowder, and the mariner's compass. The best authority seems to deny them the honor of these inventions. The Count de Gobineau, in his able "History of the Diversity of the Races," absolutely lays it down that they had nothing to do with these inventions. It is a well-known fact, says Senator Jones of Nevada, that the Chinese have been in a state of general decadence for the last 500 years. Their pottery, their porcelain, and all their other arts are in a very low state compared to what we know they were 500 years ago. They have been constantly deteriorating in arts and manufactures. Prof. Draper, on page 303 of his "Intellectual Development of Europe," says: "The practical Arabs had not long been engaged in those fascinating but wild pursuits when results of very great importance began to appear. In a scientific point of view, the discovery of the strong acids laid the foundation of chemistry; in a political point of view, the invention of gunpowder revolutionized the world." Again, on page 352, "they, that is the Arabs, also introduced inventions of a more curious kind—gunpowder and artillery. The cannon they used appears to have been made of wrought iron. But perhaps they more than compensated for their evil contrivances by the introduction of the mariner's compass." The late Mr. W. F. Mayers, Chinese Secretary to the British Legation at Peking, a critical Chinese scholar, in vol. 6 of the Journal of the North China Branch of the Royal Asiatic Society, page 82, treating of the introduction and use of fire-arms among the Chinese, says, after noting the Chinese authorities: "As regards gunpowder, therefore, it is concluded that, firstly, no proof of its invention by the Chinese can be adduced; secondly, there is reason to believe that it may have been introduced from India or Central Asia about the fifth or sixth centuries of our era."—*Industrial News*.